IN THE SPECIFICATION

Please amend the Specification as follows:

[0001] This application is related to and is a continuation of allowed U.S. Patent Application Serial No. 09/971,072, filed 10/04/2001, entitled NEUROSURGICAL DEVICE FOR THERMAL THERAPY, which is related to and claims priority to U.S. Provisional Patent Application Serial No. 60/238,314, filed 10/05/00, entitled SYSTEMS AND METHODS FOR CONTROLLING TEMPERATURE OF BRAIN TISSUE, the entirety of all of which ~~is~~ are incorporated herein by reference.

[0017] FIG. 7 is a section view taken along section ~~A—A~~ 7-7 of FIG. 6;

[0027] In addition, an optional membrane 36 is provided in thermal communication with the contact member 26 or the thermal member 28. Membrane 36 can be constructed of any bio-compatible material and can be constructed to directly contact tissue.

[0032] The thermal cartridge 58 includes the exemplary elements as discussed above for applying thermal energy to a tissue site, for example, a contact member, a thermal member, and a cooling fan (not shown). In practice, the housing 48 is secured within a skull opening by screwing the radial threads into the bone. The thermal cartridge 58 is then inserted into the inner volume 50 of the housing 48 while aligning the axial slots 60 with the axial grooves [52] 54. The thermal cartridge 58 can be slidably adjusted within the insert housing 48 in order to specifically locate the contact member against the dura matter.

[0035] The surface area expansion element 62 can be provided by several different structures, including, for example, an inflatable plenum such as a bladder or balloon. Alternatively, the expansion element [48] 62 can include foldable, rollable, or compressible, ribbons or resilient thermally-conductive structures. Exemplary resilient materials include rubber, silicon, flexible polymers and other materials known in the art. Thus, the surface area expansion element 62 is

provided with a structure that allows it to be inserted through a small opening in a body and then deployed to increase the tissue contact area 66. The tissue contact area 66 can have a shape ranging from substantially flat to concave.

[0037] FIG. 8 is a partial sectional view of a device of the invention taken along line [8] B – [8] B in FIG. 7. FIG. 8 shows the surface area expansion element 62 attached to the first end 14 of the housing 12. Further provided within the wall 68, in the interior volume 70 is a hollow injection member 76 having a proximal end and a distal end. A circulation member 78 having an outlet 80 and an inlet 82 is in fluid communication with the proximal end of the injection member 76 via the outlet 80. An example of a circulation member 78 is a fluid pump. An exemplary thermally transmissive fluid 72 is a saline solution or other such fluid. The arrangement of the circulation member 78, the outlet 80, the injection member 76, the inlet 82 and the interior volume 70 define a circulation circuit.

[0040] FIG. [10] 11 is a sectional view of an alternate arrangement of the thermal cartridge 58 shown in FIG. 5. FIG. 10 shows a cartridge wall 84 having a proximal end 86 and a distal end 88 and defining an interior 90. A contact member 26 is attached to the proximal end 86. Toward the distal end, a thermal member 28 is provided within the interior 90 adjacent and in thermal communication with the contact member 26. Still further toward the distal end 88, a thermal bridge 92 is in thermal communication with the thermal member 28 and is constructed from a thermally transmissive material. Attached to the distal end 88 and in thermal communication with the thermal bridge 92 is a thermal dissipation element 33 which is coupled with a fluid circulation member 30. It is contemplated that the location of the thermal member 28 can alternatively be toward the distal end 88.

[0042] FIG. [11] 10 illustrates another cartridge configuration for thermal transfer, wherein a fluid conduit 94 is provided in thermal communication with the thermal output side 34 of a thermal dissipation member 33. In practice, a thermally transmissive fluid is circulated through the fluid conduit 94. When the fluid transits the portion of the fluid conduit that is in thermal communication with the thermal output side 34, thermal energy is dissipated to the fluid which is then circulated to a remote fluid chiller and then re-circulated through the fluid conduit 94.

Please add the following paragraph.

[0025.1] Alternatively, the thermal member 28 can be configured to directly contact a tissue or to contact an intermediate material. The input side 32 of the thermal member 28 can be in thermal communication with a tissue or an intermediate material.